Development of Gas Proportional Scintillation Counter for light heavy ion detection

Sin-ya Hohara, Minoru Imamura, Tadahiro Kin, Yusuke Yamashita, Daisuke Maki, Fuminobu Saiho, Katsuhiko Ikeda, Yusuke Uozumi, Masaru Matoba

Kyushu University

In resent years, nuclear data are needed in medical field. Nuclear data for light heavy ion induced are especially needed in high precision for cancer treatment. Though the nuclear data are not accumulated enough to apply. We have a plan to measure light heavy ion nuclear data with a dE-E detector. Low density is needed to the dE detector, and we have two options for the dE detector, semiconductor detector (SSD) or Gas Counter. On one hand, SSD has a good energy resolution, but on the other hand, it is expensive and its decay time is on 100-microsecond order. Gas Counter is inexpensive, and Gas Proportional Scintillation Counter (GPSC) has fast decay time. Then, we developed a GPSC for dE detector, and its evaluation experiment was carried out in HIMAC (Heavy Ion Medical Accelerator in Chiba). We will report the results of the experiment, the performance of GPSC.

Email: sasami@nucl.kyushu-u.ac.jp